



**HEAT RADIATOR  
CERATHERM 600-2.  
OPERATOR MANUAL.**



## **INDEX.**

|                                      |           |
|--------------------------------------|-----------|
| <b>1. Precautions.</b>               | <b>2.</b> |
| <b>2. Definitions &amp; Symbols.</b> | <b>3.</b> |
| <b>3. General.</b>                   | <b>4.</b> |
| Introduction.                        | 4.        |
| Technical Data.                      | 4.        |
| <b>4. Operating Instructions.</b>    | <b>5.</b> |
| Structure & use.                     | 5.        |
| General description.                 | 5.        |
| Wall mounting.                       | 5.        |
| Start up.                            | 6.        |
| Setting the heating power.           | 6-7.      |
| LED heating indicator.               | 7.        |
| Alarm monitoring.                    | 7.        |
| Controllers, displays & connections. | 8.        |
| <b>5. Company Details.</b>           | <b>9.</b> |



## 1. Precautions.

The heat radiator must not be used in rooms where there is a risk of explosion, i.e. in the immediate vicinity of explosive anaesthetic gases or mixtures.

The distance between the surface on which the patient lies and the lower edge of the radiator must not be less than 80cm. If this instruction is not followed, prolonged exposure to the heat radiation may cause burns.

**“Danger of burns”** : Contact with the protective grating and the reflector should be avoided.

**“Danger of fire”** : The protective grating on the upper side of the radiator must remain unobstructed at all times in order to ensure adequate heat loss.  
Do not place anything on the protective grating.

If the type of cover on the surface is changed for example, the use of a dark sheet or heating cushions, etc., the support surface may reach excessively high temperatures and thus influence the body temperature of the infant or patient.

After the radiator has been switched on, an acoustic and visual alarm is given after 15 minutes. This can be reset for a further 15 minutes with the red button.

The infant or patient must never be left unattended under the operating heat radiator.

When using the heat radiator over incubators, care must be taken to ensure that there is sufficient space between the lower edge of the radiator and heat sensitive material, such as perspex or acrylic glass. The distance must not be less than 50cm. Set the heating power to a maximum of Level ③.

Care should be taken when adjusting the mobile stand height and that (i). the heater is switched off and allowed to cool and (ii). the upper section of the stand is supported before the height adjuster locking knob is released.

If the radiator housing is removed, there is a danger of electric shock. Only trained personnel should carry out maintenance and servicing.



## 2. Definitions & Symbols.

### Note, Important, Caution and Warning.

**Note :** The remark “Note” is used in the text to indicate procedures or conditions which might otherwise be overlooked or incorrectly understood. A note may also be used to clarify apparently contradictory or confusing situations.

**Important :** Similar to note, but used when greater emphasis is necessary.

**Caution :** The remark “Caution” is used to draw attention to a procedure, which must be followed exactly in order to avoid damaging or destroying the equipment.



**Warning:** The remark “Warning” is used in the text to draw attention to dangerous situations in connection with the operation, cleaning or maintenance of the equipment if there is a possibility of injury or danger of death to the operator or patient.



**Attention : Consult  
accompanying documents**



**AC power**



**Danger! High voltage!**



**Type B equipment**



**Attention : Hot surface**



**Power ON**

**Power OFF**



### 3. General.

#### 3.1 Introduction.

This manual contains operator instructions for the erection, use and maintenance of the Ceratherm 600-2 Radiant Warmer. Viamed Ltd are not liable for the proper functioning of the heat radiator if it is not operated according to the instructions, if the maintenance recommendations in this manual are not followed or if repairs are carried out using non-approved components.

Only trained personnel should perform calibration and repairs. Maintenance documents are obtainable from Viamed Ltd.

The personnel who work with this heater should read this manual carefully and should fully understand all instructions contained therein. The manual should be kept so that it can be easily inspected; it is advisable to store it in an easily accessible place. Contact Viamed Ltd should you require any further information.

#### 3.2 Technical Data.

The technical data for the Ceratherm heat radiator are shown in Table A. All technical data may be changed without prior notice.

**Table A.**

|                          |                                       |
|--------------------------|---------------------------------------|
| Current requirement.     | 220-240V <sub>AC</sub> 50/60Hz 630W.  |
| Protection class.        | 1.                                    |
| Degree of protection.    | B IP20.                               |
| Test provision.          | IEC 601-2 TUV / CE.                   |
| Size.                    | Width 21cm, Length 55cm, Height 90cm. |
| Weight.                  | 4.9 Kg (heat radiator only).          |
| Trolley.                 | Width 61cm, Length 82cm, Height 10cm. |
| Upright tube.            | 170 / 195cm maximum height.           |
| Height adjustment.       | 25cm.                                 |
| Swivel range of the arm. | 45°.                                  |



## **4. Operating Instructions.**

### **4.1 Structure and use.**

The heat radiator is intended for warming baby changing tables and for maintaining the body temperature of infants. The built-in ceramic radiator has very good radiation properties and generates invisible infrared radiation in the region of 3 micro/M. The skin very readily absorbs this radiation spectrum and the patients' skin colour is not altered.

### **4.2 General description.**

Refer to the front & rear diagrams on page 7.

The Ceratherm 600-2 heat radiator has 4 heat output settings, which can be individually set in the range 20% - 99%.

These output settings are indicated by the yellow indicator's (① - ④). Only one heat output settings can be active during operation. The choice of output setting is made by pressing the reverse button (<) or the forward button (>). The heating indicator lights when the element is being heated.

When the radiant warmer unit is switched on, a time interval begins. After 15 minutes a 5 second audible alarm and a continuous flashing red alarm indicator / cancel are triggered. 8 seconds later, the heat output of the radiator reduces to a pre-set value (the safety setting), with a corresponding change in the duty cycle\* of heating monitor indicator. If the alarm is cancelled by pressing the alarm indicator / cancel button, the time interval starts again and the heat radiator returns to the original heat output setting. Alarm cancellation also deactivates the flashing red alarm.

(\*) Duty Cycle : the relative length of time when the heating monitor indicator is lit compared to the length of time when it is unlit.

### **4.3 Wall mounting.**

After removing the packaging, compare the instrument data on the type plate with the available connection data. Electrical connection is via a 220V AC 50/60 Hz mains socket and a 6A connected load.

The wall holder (fixed or movable) must be fastened in solid masonry (chalky sandstone, brickwork or concrete) with suitable wall plugs and screws.

Mount the radiator in such a way that there is a distance of at least 80cm and not more than 100 cm between the surface on which the patient lies and the lower edge of the radiator.

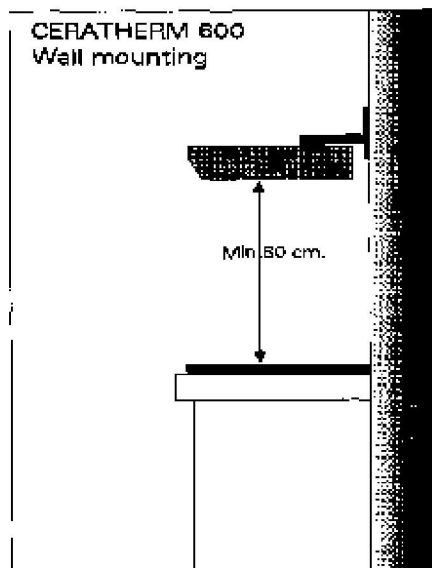


### WARNING!

The distance between the surface on which the patient lies and the lower edge of the radiator must not be less than 80cm. If this instruction is not observed, prolonged exposure to heat radiation may cause burns.

### Mounting possibilities.

Wall mounting with fixed holder.  
Wall mounting with moveable arm.  
Ceiling stand with rotatable extension arm.  
Wall stand with pivotable extension arm.  
Special version.



### WARNING!

A risk of injury is present to the operator if care is not taken when adjusting the mobile stand height ensuring that (i). the heater is switched off and allowed to cool and (ii). the upper section of the stand is supported before the height adjuster locking knob is released.

## 4.4 Start up.

1. Switch radiant warmer on / off switch to ON. The heater is now switched on.
2. Using the forward and reverse buttons {(<) & (>)}, set the desired heat output to level ① to ④. The current heat output setting is shown by a lit yellow indicator ①, ②, ③ or ④. After about 5 - 10 minutes, the treatment surface will have been preheated.

Note : The heat output of the radiator is set to zero when the reverse button (<) is repeatedly pressed until all yellow indicators (① - ④) are extinguished.

3. Set the light on / off switch to ON.  
The non dazzling halogen light is used for illuminating the treatment area.

## 4.5 Setting the heating power.

The heat output can be set in accordance with actual requirements using the four heat output settings (① - ④). The factory set levels corresponds to the following settings :

|               |               |               |               |
|---------------|---------------|---------------|---------------|
| Level ① = 25% | Level ② = 50% | Level ③ = 75% | Level ④ = 99% |
|---------------|---------------|---------------|---------------|

The heating output of the individual steps ① - ④ can be set for special applications, e.g. :

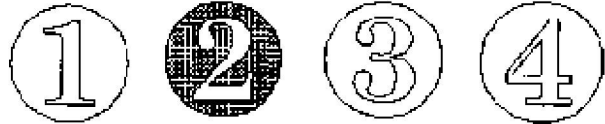
|               |               |               |               |
|---------------|---------------|---------------|---------------|
| Level ① = 20% | Level ② = 40% | Level ③ = 60% | Level ④ = 80% |
|---------------|---------------|---------------|---------------|



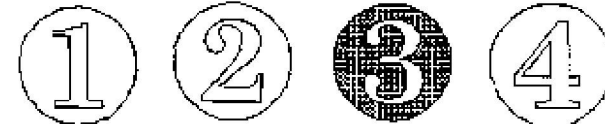
Level 1 = 25%



Level 2 = 50%



Level 3 = 75%



Level 4 = 99%



The various power levels can be used as follows :-

Level ① : To keep the support surface warm for continuous operation.

Level ② : For normal operation on changing and examination areas.

Level ③ : Additional warmth for resuscitation, the labour room or for the operating theatre.

Level ④ : For increased heat in the operating theatre, during anaesthesia or for adults.

#### 4.6 LED heating indicator.

When the heating indicator is lit, the radiator element is being heated. When high heat levels are selected, the heating indicator is lit for a longer period of time than when lower heat levels are selected. The relative amount of time that the heating indicator is on compared to when it is off, reflects the level of heat being generated by the radiator.

#### 4.7 Alarm monitoring.

When the radiant warmer unit is switched on, a time interval begins. After 15 minutes triggers an audible alarm for 5 seconds and a continuous visual alarm in the form of a flashing alarm indicator / cancel button.

The alarm can be cancelled by pressing the alarm indicator / cancel button which causes the alarm indicator to extinguish and the audible alarm signal to stop (if cancellation is carried out within the 5 second audible alarm period). If the alarm is not cancelled within 8 seconds, the heat output of the radiator is reduced to a pre-set value (the safety setting - factory set to 20%). The red alarm indicator flashes continuously.



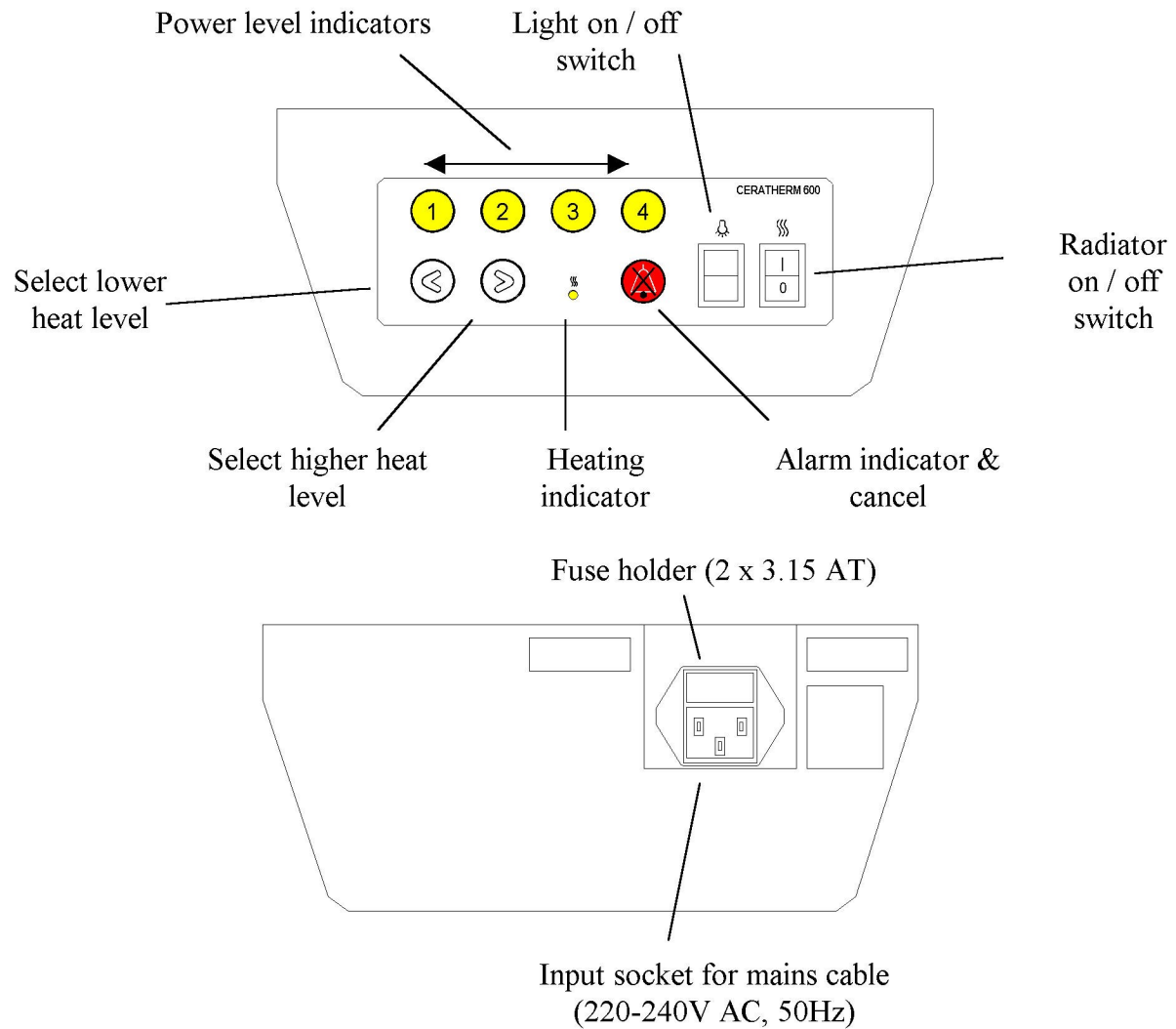
#### **WARNING!**

A child must not be left unattended on a bed with radiator switched on.



## 4.8 Controllers, displays and connections.

This section of the manual describes the controllers, displays and connections of the Ceratherm 600-2 heat radiator.





## **5. Company Details.**

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